

as well as external, I think it will be correct to distinguish this Wart-Hog, presumably from Somaliland, by a separate name, and I venture to propose to call it *Phacochærus delamerei*.

I hope that sportsmen who visit Somaliland may have their attention drawn to this animal and bring home satisfactory material to fully elucidate this question.

As the Eurasian members of Suidæ are less specialized than the African genera of the same family, it must be assumed that the hogs originated on the Eurasian continent, the more so as the oldest known fossil remains belonging to this family have been found in Europe. The genera of Suidæ less specialized than the Wart-Hog, even *Potamochoærus* and *Hylochoærus*, have the postorbital portion of the skull comparatively much longer and the interorbital region much narrower than the corresponding parts of *Phacochærus*. Thus a comparatively long postorbital and a narrow interorbital region of the skull in a Wart-Hog indicate a less specialized race. It agrees well both with the geographical distribution and origin that the most northern races of *Phacochærus*, viz. *Ph. æliani* in Abyssinia and *Ph. africanus* in Senegambia, are the least specialized. *Ph. massaicus* further south has retained a rather long postorbital region of the skull, but acquired a great interorbital breadth. The Wart-Hogs from Lake Mweru and Nyassa, on the other hand, have still a narrow forehead, but their postorbital portion is somewhat shortened, while *Ph. sundevallii* has the forehead broader but the postorbital portion not so much shortened. Finally, in the Cape region, the most specialized of all Wart-Hogs, *Ph. æthiopicus*, with very short postorbital portion and a comparatively broad forehead, is found. It has also completely lost the upper incisors, while the lower ones are absent or rudimentary. *Ph. delamerei*, which at present must be regarded as inhabiting Somaliland, has in that country independently reached a similar stage of specialization as *Ph. æthiopicus* at the Cape. It is probable that this analogy between the Wart-Hogs of the Cape and Somaliland depends upon similar natural conditions of the two countries, and if that be so there might no doubt be found other instances of parallel development within the same geographical areas.

4. On Two Chinese Serow-Skulls.

By R. LYDEKKER.

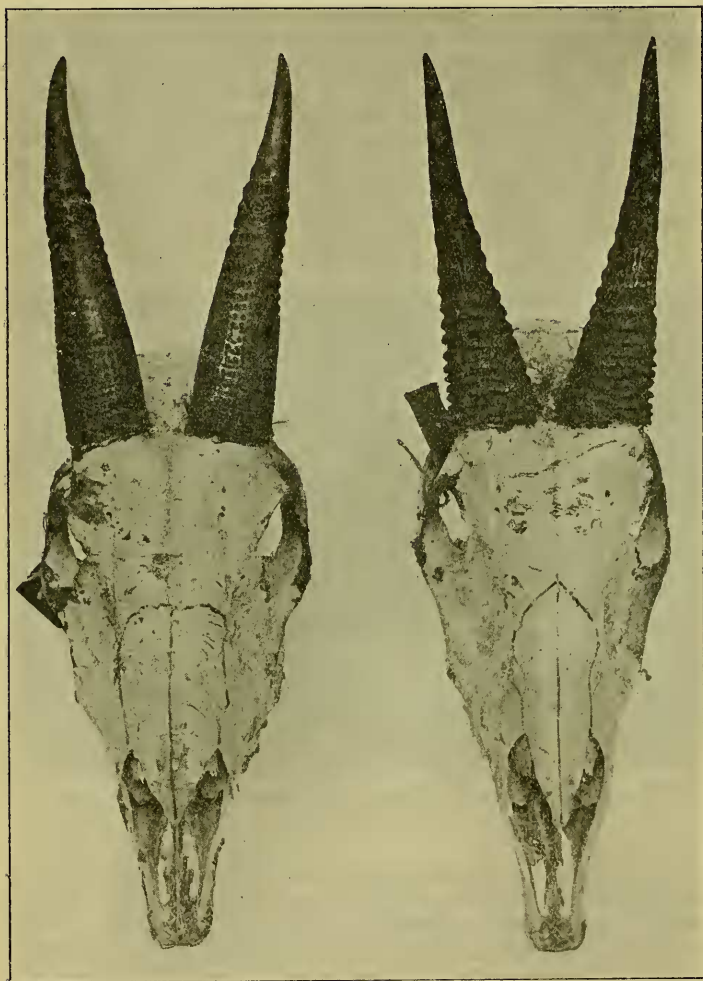
[Received October 3, 1908.]

(Text-figures 191-192.)

When I described the immature specimen of the White-maned Serow (*Nemorhædus argyrochætes*) of Sze-chuen in the Society's 'Proceedings' for 1905, vol. ii. p. 329, pl. viii., some doubt was expressed at the meeting as to whether the animal was anything more than a local race of the widespread *Nemorhædus sumatrensis*;

and it has recently been relegated to that grade*. I am now in a position to demonstrate its right to specific rank.

Text-fig. 191.



A

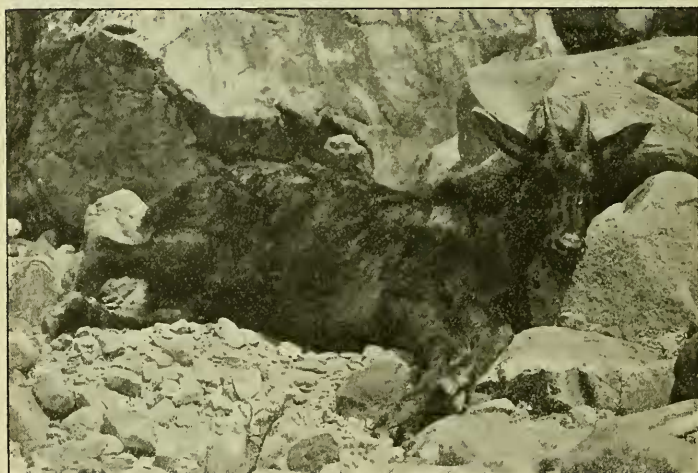
B

Female skulls of *Nemorhaedus sumatrensis milne-edwardsi* (A) and
N. argyrochaetes (B), from Sze-chuen.

* See Proc. Zool. Soc. 1908, p. 185. I am afraid I cannot follow my friend Mr. Pocock in transferring the name *Nemorhaedus* to the Gorals; it has been too long in use for the Serows.

In September last Mr. J. W. Brooke* presented to the British Museum (Nat. Hist.) the skins and skulls of an adult male and female of the White-maned Serow obtained by himself and Mr. C. H. Mears at Towquan, 60 miles north of Kanshieu, N.W. China. That they belong to this species is evident from the fact that the greater part of the fore-legs and the whole of the hind-legs, inclusive of the lower portion of the thighs, are bright rusty red. Both skins, as indicated by the teeth and horns of the associated skulls, belong to fully adult animals; the horns being much larger than those of the immature mounted specimen in the British Museum. From that specimen, and also from one recently figured by Mr. M. W. Lyon, the new skins differ, however, by the absence of such a distinctly white mane as occurs in the immature female.

Text-fig. 192.



A female of the Sze-chuen race of the Serow, *Nemorhaedus sumatrensis milne-edwardsi*, from a photograph by Mr. J. W. Brooke.

In all the races of the ordinary Serow (*N. sumatrensis*), as is well shown in the figures illustrating the paper by Mr. Pocock already mentioned, the skull is relatively broad and short, with the nasal bones likewise proportionately broad and short, although there is a considerable degree of local variation in this respect. These characters are exemplified in a third skull (text-fig. 191 A, p. 941) sent home by Mr. Brooke. I believe this to belong to the same species as the Serow shown in the annexed reproduction from a photograph (text-fig. 192), which is evidently

* [We much regret to note that since the reading of this communication news of the murder of Mr. Brooke in China has reached England.]

one of the dark-coloured races of *N. sumatrensis* allied to the Malay representatives of that species, the scalp-skin accompanying the skull being of a dark type.

The skull and photograph indicate a Chinese representative of the ordinary Serow, which is doubtless the one to which Père David gave the name *N. milne-edwardsi*. The following dimensions are taken from the skull:—

Extreme basal length	11 inches.
„ zygomatic width	5 $\frac{1}{4}$ „
Length of nasals	4 $\frac{5}{8}$ „
Width of nasals	2 $\frac{3}{8}$ „

This skull and scalp belong, it should be added, to a female.

Of a very different type are the male and female skulls from Towquan, these (text-fig. 191, B, p. 941) being narrower and longer with longer and narrower nasals. The dimensions of these two skulls are as follows:—

	Male.	Female.
Extreme basal length	12	11 $\frac{5}{8}$ inches.
„ zygomatic width	5	4 $\frac{3}{4}$ „
Length of nasals	4 $\frac{1}{2}$	4 $\frac{5}{8}$ „
Width of nasals	1 $\frac{1}{2}$	1 $\frac{1}{2}$ „

From this it will be evident that while in the White-maned Serow the basal length and the nasal length exceed the corresponding dimensions in the ordinary species, the width of the nasals is less. A further important difference is to be found in the basisphenoidal region, which is much narrower in the White-maned than in the ordinary species; while the premaxillæ are also longer and narrower in the former than in the latter.

The following measurements of the two animals taken immediately after death have been supplied by Mr. Brooke. In taking the measurements the tape is stated to have been laid flat on the body without pulling.

Male; shot March 30th, 1908.

Height at shoulder from back of foot 44".

Nose to root of tail 68".

Lip (upper) to horn 11 $\frac{3}{4}$ ".

Ear 8 $\frac{3}{4}$ " (length), ear 7" (widest part).

Circumference of hind-leg level with the point where the loose skin from the belly joins the leg 23".

Widest part of body (*i. e.* just behind withers and over breast-bone under body) 45 $\frac{1}{4}$ ".

Neck where it joins the body 27".

Narrowest part of body in front of hind-legs 38 $\frac{1}{4}$ ".

Female; shot April 1st, 1908.

Height at shoulder from back of foot 43 $\frac{1}{2}$ ".

Nose to root of tail 61 $\frac{1}{2}$ ".

Bottom of upper lip to root of horn 13".

Length of ear 9"; widest part $7\frac{1}{2}$ ".

Hind-leg level with the point where the loose skin joins the belly (as before) 18".

Widest part of body (as before) 46".

Narrowest part of body in front of hind-legs $38\frac{1}{2}$ ".

These dimensions indicate animals rather larger than Sumatran Serows; and in some degree justify Mr. Henry's statement as to the Chinese animal being as large as a cow.

In my opinion, Mr. Brooke's specimens fully justify the recognition of *Nemorhædus argyrochaetes* as a valid species, especially as it appears to inhabit the same district as *N. milne-edwardsi*. The ears of the White-maned species appear to be rather larger than those of the other.

Mr. Brooke mentions that the White-maned Serow is known to the natives as "Nikka" and the dark species as "Nik-lu."

The Sze-chuen race of the true Serow has the back black mingled with white; the front of the fore-legs is black to the knees, below which the limb is grey with patches of rusty; the hips and posterior surfaces of the hind-limbs are rufous, the black on the front surface extending some distance short of the hocks. These particulars are taken from a mounted skin presented by Mr. Brooke to the Museum.

I may add that I have given a preliminary notice of the specimens forming the subject of this paper in the 'Field' for October 8th, 1908.

5. Warning Coloration in the Musteline Carnivora*. By R. I. Pocock, F.L.S., F.Z.S., Superintendent of the Zoological Society's Gardens.

[Received December 15, 1908.]

(Text-figures 193-198.)

As long ago as 1846, Hamilton Smith wrote: "The Rats offer one more instance of the colours of the fur being light on the upper surface of the body and dark beneath, producing a kind of family livery, alike in this and the Grisons, *Taxidea* and *Meles*, and not obliterated in *Eira* [*Galera*] and *Arctonyx*."† The circumstance in fact is so well known that it would be profitless to search literature for earlier and even later records. Some later authors indeed have drawn attention to the style of coloration above described as being uncommon and as a "divergence

* Under the term Musteline I include in this paper both Weasel-like and Badger-like Carnivora, which are generally referred to two distinct subfamilies, Mustelinæ and Melinæ. I have not aimed at making the list of nauseous species complete; but have based my conclusions in the main upon those which have come, as living animals, directly under my own observation.

† Jardine's Nat. Library, xv. Mammalia, pp. 205-206.